

## Development of High Efficiency Thermionic Power Generator, Phase I

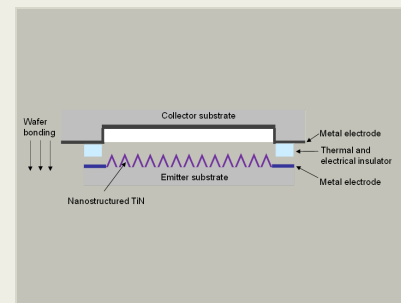
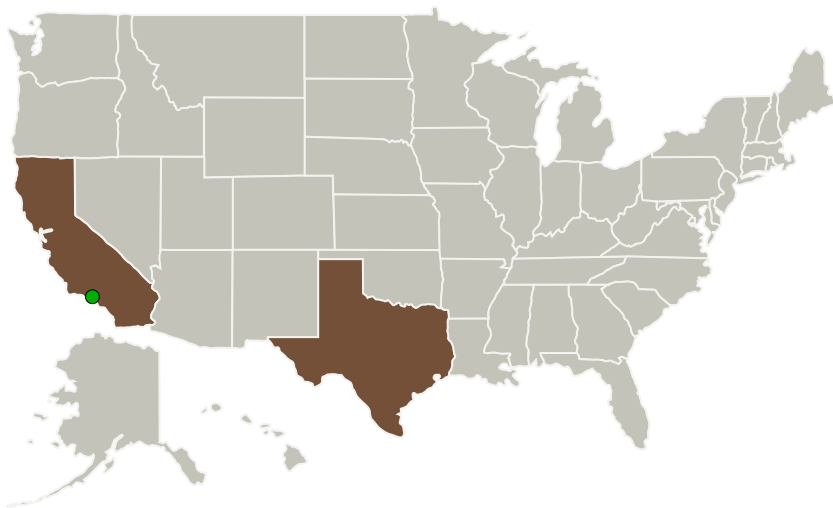


Completed Technology Project (2015 - 2015)

## Project Introduction

In space exploration missions where photovoltaic power generation is inadequate due to a lack of sunlight, and for missions with moderate power draw and increased mobility requirements, thermal-to-electric power generator systems using radioisotopes as heat sources provides NASA with a viable solution. Nanohmics Inc. proposes to develop a novel high efficiency thermionic thermal-to-electric converter (TTEC) using nanostructured emitters for integration with radioisotope thermoelectric generators application. The emitter material employed in the proposed TTEC device allows the device to be operated in harsh and high temperature environment.

## Primary U.S. Work Locations and Key Partners



Development of high efficiency thermionic power generator, Phase I

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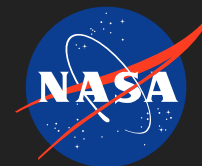
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Organizations Performing Work	Role	Type	Location
Nanohmics, Inc.	Lead Organization	Industry	Austin, Texas
● Jet Propulsion Laboratory(JPL)	Supporting Organization	NASA Center	Pasadena, California

## Primary U.S. Work Locations

California	Texas
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## Project Transitions

**June 2015:** Project Start

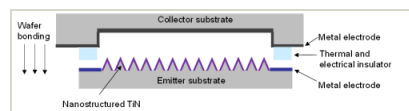
**December 2015:** Closed out

**Closeout Summary:** Development of high efficiency thermionic power generator, Phase I Project Image

### Closeout Documentation:

- Final Summary Chart Image(<https://techport.nasa.gov/file/138932>)

## Images



### Briefing Chart Image

Development of high efficiency thermionic power generator, Phase I

(<https://techport.nasa.gov/image/133131>)

## Organizational Responsibility

### Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

### Lead Organization:

Nanohmics, Inc.

### Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

## Project Management

### Program Director:

Jason L Kessler

### Program Manager:

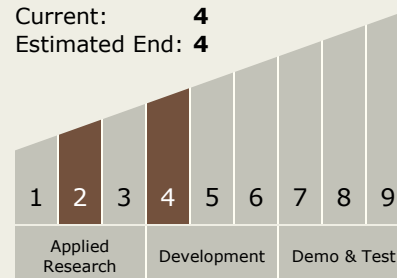
Carlos Torrez

### Principal Investigator:

Steve Savoy

## Technology Maturity (TRL)

Start: 2  
Current: 4  
Estimated End: 4



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## Technology Areas

### Primary:

- TX03 Aerospace Power and Energy Storage
  - └ TX03.1 Power Generation and Energy Conversion
    - └ TX03.1.3 Static Energy Conversion

## Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System